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Publication date:
2013

Document Version
Publisher's PDF, also known as Version of record

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Citation (APA):
Pons Rotger, G. A., & Nielsen, T. A. S. (2013). *Analysing accessibility effects in a continuous treatment framework: the case of Copenhagen metro*. Abstract from Strategisk forskning i transport og infrastruktur, Kongens Lyngby, Denmark. http://wwwx.dtu.dk/Sites/strategisk_transportforskning2013/Program.aspx

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Drivers- and Limits

Analysing accessibility effects in a continuous treatment framework: the case of Copenhagen metro

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This paper tests the the impact of a public transport infrastructure on commuting distances by analysing the behaviour of workers who were living in the neighbourhood of the new facility when the location of stations was decided. The infrastructure analyzed was the first phase of the Copenhagen Metro where 6 metro stations were selected for analysis: Lergravsparken, Amagerbro, Islands Brygge, DR Byen, Bella Center, Sundby. The analysis focused on residents living within 1000 meters of the coming metro stations in 1996 – when the plans where approved, and 8 years before the opening. The paper apply adose-response approach under the assumption of weak unconfoundedness to first assessing the possible presence of residential selectivity and to estimate job accessibility effects of the metro.

The paper analyzes residential immobility and wage employment, finding that proximity to a metro station increases the probability of residential immobility and the probability of wage employment after the metro opening. For commuting the paper apply a distinction between short and long commutes derived from the median commuting distance among the respondents. Results indicate that proximity to a metro station increases the probability of long commutes (> 4 km) - and decreases the probability of short commutes (< 4 km). Proximity to a metro station generally increases the probability of longer commuting – but differences in the responses to the metro can be found among subgroups.

Comparing men and women it is mainly women that are affected by the accessibility gain and commute longer distances in responses to proximity to the metro. Comparing older and younger commuters it is mainly the older commuters that respond to the increased accessibility offered by metro access – by commuting longer distances. Comparing income groups a considerably stronger response to the increased accessibility is seen in the highest earning and presumably most skilled group.

Comparing commuting responses to metro access grouped by the past commuting behavior of the respondents indicate a positive effect of proximity to the metro on the probability of commuting a long distance irrespective of past behavior. Thus, the choice to commute longer than in the past - and the choice not to shorten commuting distance is more often made by those with proximity to a metro station.